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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,396	09/23/2003	Takeshi Yoneda	032405R156	9368

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EXAMINER	
MANCHO, RONNIE M	
ART UNIT	PAPER NUMBER
3663	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,396	TAKESHI YONEDA	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,26,29 and 31-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,26,29 and 31-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-12, 26, 29, 31-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, the limitation, "computes the final clutch torque by a computation involving the first clutch torque and the second clutch torque in association with a ratio coefficient value which ratio coefficient value changes according the diameter difference of the tire so as to suppress a wheel slippage" is new matter.

In claim 33, the limitation, "said first end second torques are summed and said first and second torques are each associated with a weighted average ration coefficient" is new matter. Applicant is called upon to show in the disclosure by page and line where the limitations are disclosed.

The rest of the claims are rejected for depending on a rejected base claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12, 26, 29, 31-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In claim 1, paragraphs 4 and 5, the applicant recites, "the clutch unit". Is applicant referring to the first or second clutch unit?

In claim 4, it is not clear what all is meant and encompassed by "a slippage detection is *difficult* to be detected". Applicant does not provide the requisite degree to measure difficulty. The limitation is indefinite.

The rest of the claims are rejected for depending on a rejected base claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103 that form the basis for the rejections under this section made in this Office action:

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-12, 26, 29, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodrigues et al (6047231) in view of Ozaki et al (US 2002/0005077)

Regarding claim 1, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40) disclose a differential limiting control apparatus for a vehicle having a clutch unit 135 interposed between one rotational shaft 132 and another rotational shaft 133 (fig. 1) for variably changing a

driving force transmission between the one rotational shaft and the other rotational shaft, comprising:

A target differential speed setting unit for setting a target differential speed between the one rotational shaft and the other rotational shaft (col. 3, lines 23-67);

An actual differential speed detecting unit for detecting an actual differential speed between the one rotational shaft and the other rotational shaft (col. 3, lines 23-67; col. 4, lines 29-67)

a tire diameter difference computing unit for computing diameter difference of a tire (col. 9, lines 1-21); and

a throttle opening amount detecting unit for detecting a throttle opening (col. 5, lines 20-29)

Rodrigues disclose the limitations above, but did not particularly disclose "a first control unit for computing the clutch torque", "a second control unit for computing a second clutch torque", and "a final clutch torque computing unit for computing a final clutch torque". However, Ozaki et al (sections abstract, 0021, 0025, 0031, 0054, 0057, 0063-0080; figs, 1-4, 8-13) teach of:

a first control unit for computing unit for computing a first clutch torque of the clutch unit based on a deviation between a target differential speed and an actual differential speed (sections abstract, 0021, 0025, 0031, 0054, 0057, 0063-0080; figs, 1-4, 8-13).

a second control unit for computing a second clutch torque of the first clutch unit based on a throttle opening amount (sections abstract, 0021, 0025, 0031, 0054, 0057, 0063-0080; figs, 1-4, 8-13); and

a final clutch torque computing unit for computing a final clutch torque, wherein the final clutch torque computing unit computes the final clutch torque by a computation involving the first clutch torque and the second clutch torque in association with a ratio coefficient value which ratio coefficient value changes according the diameter difference of the tire so as to suppress a wheel slippage (sections abstract, 0021, 0025, 0031, 0054, 0057, 0063-0080; figs, 1-4, 8-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rodrigues as taught by Ozaki for the purpose of preventing shock from being given to a driver (sec 0015)

Regarding claim 2, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) as modified by Ozaki disclose the differential limiting control apparatus of claim 1, wherein:

the first control unit comprises:

a first clutch torque computing unit for computing the first clutch torque by obtaining the deviation between the target differential speed and the actual differential speed with a switching function by using at least a polarity related to an integral term of the deviation and by applying a sliding mode control.

Regarding claim 3, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth in claim 1, wherein:

the final clutch torque computing unit reduces the ratio coefficient value associated with said second clutch torque and increases the ratio coefficient value associated with said first clutch torque as the diameter difference of the tire increases.

Regarding claim 4, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth in claim 1, wherein:

the tire diameter difference computing unit calculates the diameter difference based on at least the actual differential speed between the one rotational shaft and the other rotational shaft when the vehicle is running substantially straight and when slippage detection is difficult to be detected between a road and wheels.

Regarding claim 5, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth claim 1, wherein:

the clutch unit is interposed between a front axle and a rear axle.

Regarding claim 6, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth claim 2, wherein:

the clutch unit is interposed between a front axle and a rear axle.

Regarding claim 7, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth claim 3, wherein:

the clutch unit is interposed between a front axle and a rear axle.

Regarding claim 8, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth claim 4, wherein:

the clutch unit is interposed between a front axle and a rear axle.

Regarding claim 9, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth claim 1, wherein:

the clutch unit limits a differential action of a differential interposed between a left wheel and a right wheel.

Regarding claim 10, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth Claim 2, wherein:

The clutch limits a differential action of a differential interposed between a left and a right wheel.

Regarding claim 11, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth Claim 3, wherein:

The clutch limits a differential action of a differential interposed between a left and a right wheel.

Regarding claim 12, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the differential limiting control apparatus as set forth Claim 4, wherein:

The clutch limits a differential action of a differential interposed between a left and a right wheel.

Regarding claim 26, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the apparatus as set forth in claim 1, further comprising a brake switch, and

when an On signal is inputted from the brake switch, the second clutch torque is made to be zero.

Regarding claims 29-32, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose a final clutch torque which involves the claimed equation as disclosed by the applicant.

Regarding claim 33, Rodrigues (abstract, figs. 1-4; col. 2, lines 54 to col. 3, lines 1-40; col. 4-9) in view of Ozaki disclose the apparatus as set forth in claim 1, wherein said first and second torques are summed and said first and second torques are each associated with a weighted average ratio coefficient value.

MPEP 2114

9. The statements of intended use or field of use, "to effectively suppress", "adequately setting", see claims 1 and 13; "computes", see claim 25; "when ON is inputted", "is made zero", see claim 26; and the equation (Tlsd = RtrT lsdff + (1-Rtr).Tlsdfb" etc clauses are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Response to Arguments

10. Applicant's arguments filed 1/10/07 have been fully considered but they are not persuasive.

Applicant argues that the prior art Rodrigues does not disclose the phrase, "utilize the degree of effective diameter difference of the small tire". It is noted that the phrase is not claimed.

Applicant further recites that the prior art, Ozaki fails to disclose the phrase, "the degree of the effective diameter deficiency of the small tire". It is noted that the limitation was not claimed.

11. It should be point out the limitation that is close to the above tire diameters is disclosed as follows, "computes the final clutch torque by a computation involving the first clutch torque and the second clutch torque in association with a ratio coefficient value which ratio coefficient value changes according the diameter difference of the tire so as to suppress a wheel slippage". The limitation is new matter.

Applicant further argues that the prior art does not disclose limitations drawn to comparing features. It is noted that applicants argument are directed to MPEP 2114 issues. Applicant is encouraged to pay attention to the MPEP 2114 section cited above.

It is noted that the prior art anticipates applicant's claimed structure and is capable of performing the method or intended use steps argued by the applicant.

It is believed that the prior art anticipates the claims. The rejection therefore stands.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho
Examiner
Art Unit 3663

4/2/07

JACK KEITH
SUPERVISORY PATENT EXAMINER